# PARK GULCH THP

**Location**
The estimated 790 acre Park Gulch THP is located approximately 13 miles east and southeast of the community of Fort Bragg, California. The legal description is portions of Sections 3, 4, 5, 8, 9 and 10, T17N, R15W, Mount Diablo Base and Meridian.

**Timber Harvest Preparation**
To date, most of the watercourses have been classified and the majority of the road locations, including new roads, have been identified. By estimate, 60-65% of the THP area will be cable-yarded and 35-40% will be tractor-yarded. Final timber harvest and silviculture boundaries are not complete. Some areas may be removed from the harvest area illustrated on the attached Preliminary THP Map, given that some areas may not be suitable for harvest due to either the lack of conifer harvest volumes, poor site conditions or limitations of logging equipment.

**Harvest History**
Most of the proposed THP area was harvested by the Caspar Lumber Company in the 1940's, and the majority of the old growth trees were harvested during this time. The entire logging area utilized tractors to yard logs downhill to streamside roads and then hauled to Camp 20. The harvest area was re-entered in the 1970's to remove the remaining old growth trees. Very few old growth trees were observed during sale preparation.

**Topography**
Elevation ranges from approximately 400 feet at the lowest far west and southern THP boundary to approximately 1200 feet at the ridgetop near the east boundary. Approximately one-third of the slopes are north facing, one-third south facing with the remaining areas roughly equally divided between east and west facing slopes. A prominent ridge runs east-west along Road 231. Stream channels are altered, largely due to disturbances created from historic logging. The majority of the harvest area for both young-growth redwood and Douglas-fir is Site Class III. A small area located in the northeast corner is composed of Site Class IV.

**Watershed and Stream Conditions**
Park Gulch is a marginal Class I watercourse, supporting steelhead and Coho salmon. The Class I break is an approximate 10 foot bedrock waterfall, located 2,000 feet upstream from Chamberlain Creek. The stream channel is narrow with an abundance of large woody debris, mostly contributed from historic logging activity.

There are several main Class II channels within the plan area, many of them downcutting through material that was deposited during the early logging. The Class II gradient typically varies between 5% and 15% in lower reaches and 25% to 50% in upper reaches. Watercourses are well shaded throughout their lengths. Many new channels were developed as a result of historic logging, creating braided channels and introducing large woody debris into watercourses.

The Chamberlain Creek Watershed, including Park Gulch, was highly impacted by the logging of the old growth forest. Most of the watershed was tractor logged, resulting in a high density of skid trails and roads, many located near the watercourse channels. Tractor equipment yarded logs across the slope and along stream banks, displacing soil and depositing material into watercourses.

**Vegetation and Stand Conditions**
The current conifer stand is mostly comprised of 70 year old unmanaged second growth redwood, Douglas-fir and a minor component of grand fir. A few 40-45 year old third growth trees were observed. The hardwood component consists primarily of tanoak. Other tree species include pacific madrone, golden chinquapin and wax myrtle. Major constituents in the understory are tanoak, evergreen huckleberry and some manzanita. Understory vegetation is denser in areas dominated by hardwoods. Conifer regeneration is mostly absent throughout, with the exception of highly suppressed conifers that had regenerated from historic logging disturbance.

Both poor and moderately stocked areas were observed throughout the sale area. Some isolated pockets of larger diameter conifers are located near watercourses, draws and along ridgetops. Overall, conifer stem diameters are generally small, with few trees exceeding 30 inches DBH. Tanoak is relatively abundant throughout the sale area, overall composing approximately 42% of the total basal area and exceeding the total conifer stems per acre by approximately 125%. In some areas, tanoak is the dominant tree species.

| Species | Stems (per acre) | Basal Area (sq. ft./acre) | Gross Conifer Volume (bd. ft./acre) |
|---|---|---|---|
| Young Redwood | 70 | 128 | 18,700 |
| Young Douglas-fir | 26 | 52 | 9,900 |
| Whitewoods | <1 | <1 | 100 |
| Hardwoods | 120 | 75 | |
| Conifer Totals | 96 | 180 | 28,700 |

*Table 1. Stand estimates were derived from 2005 FRI plots (72 plots) within the THP boundary.*

**Silvicultural Prescription**

Areas composed of dense tanoak canopies are a significant factor in limiting conifer growth rates and site occupancy in an area that historically had higher conifer occupancy. Developing a prescription that promotes conifer growth in a hardwood dominated stand is challenging. Without a reasonable effort to control hardwoods, reduced growth rates of residual conifers and lack of successful conifer regeneration can be expected.

In order to maximize the opportunity to manage hardwoods, a close assessment of the components of the overstory vegetation must be conducted. Thus far, only a preliminary assessment has been made. These efforts focus on areas that range from moderate conifer stocking with a hardwood component, to areas dominated with tanoak. Considerations for establishing the harvest and silviculture boundaries include the balance of implementing selection silviculture, while attending to hardwood control measures and preparing an economically feasible harvest plan.

Single Tree and Group Selection. The target harvest is approximately 25% to 35% of the pre-harvest conifer basal area (BA). Selection silviculture will be implemented to initiate the conversion of a relatively even-aged stand to an uneven-aged condition.

| Conifer PreHarvest Basal Area | *Estimated Conifer PostHarvest Basal Area |
|---|---|
| 180 $ft^2$/acre | 118-135 $ft^2$/acre |
| hardwood preharvest basal area averages 85 $ft^2$/acre and will be reduced by ~ 15-20% | |

*Table 2. *Actual basal areas may change as more accurate data is obtained. Expressed as a range due to high level of variability. Target conifer retention is estimated at 65% to 75% of the preharvest level for single tree and 75% for group selection silviculture harvest units.*

Group Selection

Generally, areas of poor conifer stocking correlate with a high hardwood component. Group selection is best suited to improve conifer stocking and reduce hardwood competition in these areas. Less than 20% of the area that will be designated for group selection harvest (excluding WLPZ's) will be made up of group openings. The average group opening is expected to be 1.5 to 2.0 acres, with larger group openings up to 2.5 acres. Consideration is given to stand composition, topography, logging operations and location of future group openings for determining group size. Establishing logical group opening locations (and size) will include planning for future groups and choosing areas where conifers are expected to maintain site occupancy.

Following the creation of groups, redwood seedlings will be planted at 10-12 foot spacing within the groups. Hardwood control measures will be implemented within groups to reduce competition with naturally regenerating and planted conifer seedlings. Hardwoods will be treated within all groups. A proportion of groups will include either "hack and squirt" of standing hardwoods or mechanical cutting of hardwoods, followed by cutting hardwood sprouts/seedlings sometime post-harvest (2-3 years). Herbicide may also be utilized for hardwood stump treatments.

Single Tree

The target harvest basal area (25% to 35% of pre-harvest BA) will be marked for areas of single tree selection. Tree marking will focus on reducing competition between co-dominant crown classes. Co-dominant and dominant conifers will be harvested where it will benefit the growth of residual conifers. Trees with optimal spacing, live crown ratios, form and high vigor will be considered for retention. Smaller trees will also be harvested, targeting trees with poor form and vigor. Larger Douglas-fir will be harvested to release adjacent redwood. Douglas-fir stems that show decline or poor vigor will be marked for harvest.

Hardwood trees will be harvested where they are directly competing with residual conifers.

Old Forest Structure Zone (OFSZ)
Located in the far southeast corner of the proposed Park Gulch THP, approximately 8 acres are within the OFSZ. Management in the OFSZ will be aimed at producing structural characteristics of an older forest, which include large trees, snags, down logs, multiple canopy layers and a high level of structural diversity while coincidentally growing and producing timber through thinning and periodic replacement of large trees. The entry currently under planning will focus on reducing competition in codominant trees to increase growth rates and maintain large trees overtime. Thinning levels will be adequate to recruit minor amounts of regeneration to promote vertical diversity while carrying a significant portion of the stand forward.

Basal area thresholds will be used as guidance for locating group and single tree selection units. Basal area estimates will be derived from both ground based ocular estimates and cruise plot data. Group selection will be implemented in areas where the pre-harvest conifer basal area is < 120 sq.ft. per acre and single tree selection in areas with > 160 sq.ft. per acre. Either single tree or group selection may be implemented where the conifer basal area is between 120 and 160 sq. ft. per acre. Considerations will include establishing logical silviculture unit boundaries and the maintenance of the relative hardwood to conifer site occupancy.

Hardwood control measures are proposed on up to 200 acres of the THP area. These treatments will be implemented within and between group openings in the group selection areas and may be also be done within the single tree selection areas. Areas that will maximize benefits to the residual conifer growth, development of a new age and conifer site occupancy will be prioritized for treatment.

**Watercourse Protection**

- Class I streams have a 150' Water/Lake Protection Zone (WLPZ). No trees will be marked for harvest in the first 100 feet of the WLPZ. Trees will be marked for harvest within the remaining 50 feet.
- Watercourses typed as Class II – (Large, ref. 14 CCR 916.9) watercourses within 1,000 feet of a Class I have a 100' WLPZ, where no trees will be marked for harvest within the entire WLPZ. The remaining Class II watercourses (standard, ref. 14 CCR 916.9) have a 100 WLPZ, where no trees will be marked for harvest in the first 25 feet of the WLPZ. Trees will be marked for harvest within the remaining 75 feet.

For all WLPZs where trees will be marked for harvest, a light harvest aimed at increasing growth on larger diameter trees will occur. Harvest of trees is allowed for the need to conduct safe cable operations in WLPZ areas where no trees are designated for harvest.

**Roads**

Approximately 3.5 miles of new road construction is proposed, including roads 231B, 231C and spur roads. Approximately 2.5 miles of road, including road 203 and most of road 204 is proposed for abandonment. Two short road segments located east of Road 231A are also proposed to be abandoned. Existing roads include JDSF Forest Road 202, 231 and segments of Roads 204, 230 and 231A. All existing roads are stable and proposed roads are generally located on ridge tops. Improvements to drainage will occur on existing roads and new roads will be outsloped.

**Wildlife**

The plan contains habitat suitable for Northern Spotted Owl (NSO) (*Strix occidentalis caurina*). There are two historic NSO activity centers within 1,000 feet of the plan boundary, MEN 002 and MEN 516. A two year survey for the NSO will begin this year, 2013.

**Marbled Murrelet**

There is no potential murrelet habitat within the plan area. Potential murrelet habitat exists within ¼ mile of the THP in the Camp 20 Grove 500 feet from the southwest corner of the THP boundary. The Camp 20 Gove was surveyed in 2005/06 and 2008/09 with no murrelet detections.

**Botany**

A botanical survey is scheduled to be completed by fall of 2013.

**Demonstration**

The west half of the Park Gulch THP is roughly within the JDSF "Major Demonstration, Experiment and Education Area".

1. Document the cost effectiveness, revenues and costs, of different group and single tree selection methods.

2. Demonstrate the ability to conduct harvesting and road abandonment activities that maintain trail/road conditions compatible with equestrian and other recreational use.

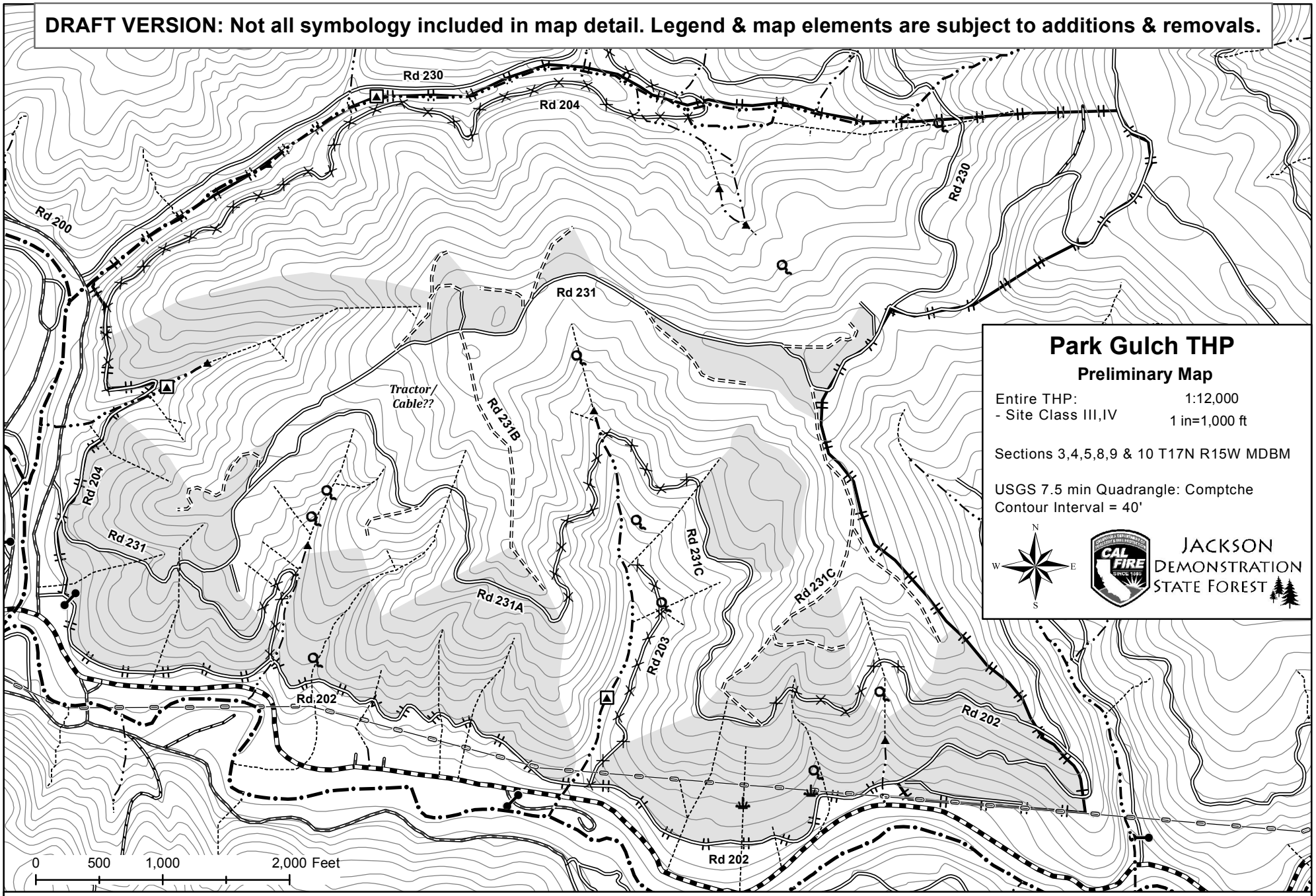
**Recreational and Aesthetic Considerations**

- Use of firearms is not allowed within a portion of the sale area due to proximity of the Chamberlain Creek Conservation Camp.
- Road access to the sale area includes JDSF Forest Roads 202, 230 and 231. Road 202 and 231 are impassible year round by vehicle. Road 231 is blocked at the intersection with Road 230 and is currently inaccessible at the intersection with Road 200, where a gate will be installed. Road 202 is locked year round. Road 230 is locked during the winter period and accessible by vehicle during dry periods only.
- The sale area is available for public recreation, including hiking and bicycle riding. Portions of the plan area are located within the Road and Trail Corridor management areas adjacent to Road 200, Road 202, Road 230, Road 231 and Highway 20. In addition, existing roads and skid trails associated with the proposed Park Gulch THP are frequently utilized by equestrians.
- No specifically designated recreation facilities exist within the area.

The effort to minimize the aesthetic impacts of Road 200, Road 231 and Highway 20, operations within 200 feet will include light harvesting, maintaining canopy adjacent to roads and other vegetation acting as a visual barrier.

Road abandonment efforts will be conducted to meet the objectives of reducing sediment inputs into streams, while maintaining trail/road conditions compatible with equestrian and other recreational use.

**DRAFT VERSION: Not all symbology included in map detail. Legend & map elements are subject to additions & removals.**




# Park Gulch THP

## Preliminary Map

Entire THP: 1:12,000
- Site Class III,IV 1 in=1,000 ft

Sections 3,4,5,8,9 & 10 T17N R15W MDBM

USGS 7.5 min Quadrangle: Comptche
Contour Interval = 40'

N
W E
S

CAL FIRE SINCE 1885

JACKSON DEMONSTRATION STATE FOREST

THP Boundary

Single Tree Selection Silviculture (all other areas Group Selection)

Tractor Yarding (all other areas Cable)

=R=R=R Proposed Road Reconstruction

======= Proposed Seasonal Road

X X X Proposed Road Abandonment

* * * * * Road > 200' & >15% Grade

Skid Trail

Existing Permanent Road

*all displayed permanent roads in Class I WLPZ*

Existing Seasonal Road

Existing Temporary Road

NOTE: Permanent and seasonal roads are considered "public"

Map Point

Gate

Wet Area

Spring / Seep

Watercourse Class Transition (mid stream)

Class II L 1,000' Transition

Class I Watercourse (salmonoid spawning & rearing habitat)

Class II L Watercourse

Class II S Watercourse

Class III Watercourse